

## **Analytical extension of lunar libration tables**

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### **Abstract**

Tables of lunar physical libration defining the analytical dependence upon the parameters of the lunar gravitational field are presented. The tables are obtained on the framework of the "main problem" in lunar libration by integration of the Hamilton equations reduced to the harmonic oscillator equations. The variables of physical libration have been obtained in the form of Poisson series. The distinguishing feature of the tables is that these series are the analytical extension of semianalytical solution computed for a number of dynamical parameters LURE2. A comparison with the Eckhardt's solution is briefly presented. The previously revealed disagreement of the mean inclination of lunar equator to ecliptic with that in Eckhardt's "solution 500" has been maintained. © 1996 Kluwer Academic Publishers.

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### **Keywords**

Lunar rotation, Physical libration